

Remarks

Reconsideration and allowance of this application, as amended, are respectfully requested.

Claim 1 has been editorially amended. Claims 1, 3, 4, 13 and 14 remain pending in the application. The rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein. No new matter has been introduced through the foregoing amendments.

Entry of each of the amendments is respectfully requested.

35 U.S.C. § 103(a) - Scherzer, alone, or in view of Fujita

Claims 1, 3, 4, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,031,013 to Scherzer et al. (hereinafter "Scherzer"), alone, or in view of U.S. Patent No. 6,303,669 to Fujita et al. ("Fujita"). The Office Action states (page 3) that "Scherzer et al. differs from applicants' claims in that urea modification to the polymer through inclusion of urea groups is not particularly required." The Office Action concludes (page 3) that "it would have been obvious . . . to have employed isocyanates containing urea groups as disclosed by Scherzer et al. . . . in order to arrive at the products of applicants' claims . . ."

The rejection is respectfully traversed. First, with respect to Scherzer alone, the claimed invention would not have been obvious because there is no suggestion or motivation in Scherzer that would have led one to modify the reference in a way that would produce the invention defined by any of claims 1, 3, 4, 13, and 14.

The examiner's statement (Office Action page 3) that "Scherzer et al. differs from applicants' claims in that urea modification to the polymer through inclusion of urea groups is not particularly required" is incorrect. Applicants' claimed

invention does not require urea modification to the polymer through inclusion of urea groups. In fact, as explained in the specification and summarized below, the basis of Applicants' claimed invention is doing exactly the opposite, i.e., *minimizing* the number of urea groups in the reaction product.

To review the Applicants' disclosure, when polyol, isocyanate, and water are reacted, a urethane bond and a urea bond are *formed*. The urea bond is easily hydrolyzed. So, if the reaction product contains a large number of urea bonds, the product's moisture and heat resistance will decrease. As a result, the flexible polyurethane foam is not suitable for use as a speaker edge. In Applicants' claimed invention, in order to reduce the number of urea bonds in the reaction product, two kinds of polyol that are different in molecular weight are used.

As explained in Applicants' response filed June 13, 2005, Scherzer discloses a polyurethane foam based on a polyisocyanate polyaddition product produced by reacting isocyanates with compounds which are reactive toward isocyanates and have a molecular weight of from 400 to 8000 in the presence of blowing agents, catalysts, chain extenders, crosslinkers, and additives. The compounds which are reactive toward isocyanates are referred to as polyols, including functional polyether polyols and/or those based on glycerol and/or trimethylolpropane. The polyurethane foams are used as an insulation material in the building and refrigeration appliance sector, e.g., as an intermediate layer for sandwich elements or for filling a refrigerator housing or freezer chest housing with foam (column 10, lines 4-8).

Furthermore, with regard to the isocyanates, Scherzer discloses (column 2, lines 51-56) the following:

Furthermore, in addition to the isocyanates of the present invention having isocyanurate and/or biuret structures, it is possible to

use diisocyanates and/or polyisocyanates containing ester, urea, allophanate, carbodiimide, uretdione and/or urethane groups in the process of the present invention (emphasis added).

Thus, Scherzer explicitly teaches the use of isocyanates that contain urea.

That, however, is not Applicants' claimed invention. The concept of the present invention, and the objects of the present invention, are opposite to those of Scherzer. Applicants' claimed edge member includes a "flexible polyurethane foam [that] has a molar ratio of urea bond relative to urethane bond of 7 or less and more than 0.2." Because in Applicants' foam it is desirable to reduce the number of urea bonds, an isocyanate that includes urea bonds as disclosed by Scherzer is not used in the present invention. That is, in order to satisfy the claimed "molar ratio of urea bond relative to urethane bond of 7 or less and more than 0.2," the isocyanate used in Applicants' claimed invention does not contain a urea bond.

While Applicants' claimed invention defines the ratio of the urethane bond and the urea bond, Scherzer neither teaches nor suggests this limitation. From the disclosure of Scherzer, therefore, the urea-to-urethane bond ratio is not known.

Furthermore, in the present invention, since a polyether polyol with a high molecular weight is used, the tensile strength is maintained. In Scherzer's embodiment that includes one kind of polyol and an isocyanate containing a urea bond, the tensile strength associated with Applicants' claimed product is not obtained.

And, since Applicants' claimed hydroxyl compound includes a lower molecular weight polyol present in the amount of 0.5-20 parts by weight, the formation of urea bonds is minimized, so

that the product is characterized by excellent resistance to moisture and heat.

Scherzer, therefore, by teaching the use of isocyanates that contain urea, teaches away from the claimed invention.

Furthermore, Applicants' claim 1 is directed to "[a]n edge member of a diaphragm of a speaker made of a flexible polyurethane foam." In Scherzer, the polyurethane foam is used as insulation material in the building and refrigeration appliance sector. Applicants' claimed flexible polyurethane foam speaker edge member is neither disclosed nor suggested by Scherzer.

Therefore, the claimed invention would not have been obvious because there is no suggestion or motivation in Scherzer that would have led one to modify the reference in a way that would produce the invention defined by any of claims 1, 3, 4, 13, and 14.

The rejection over Scherzer in view of Fujita is similarly traversed.

As explained in Applicants' response filed June 13, 2005, Fujita is directed to a polyurethane foam and a speaker edge comprising the polyurethane foam. The polyurethane foam is obtained by reaction of a composition comprising a polyisocyanate and a polyol component. The polyol component contains a polyether polyol and polyester polyol between ester bonds, the polyester polyol having at least one of (i) a hydrocarbon group having at least 5 carbon atoms and (ii) a group having a hydrogen atom bonded to a skeleton containing at least 5 atoms consisting of carbon atoms and hetero atoms.

First, Applicants' claimed edge member would not have been obvious because the disclosure of Fujita does not rectify the above-described deficiency of Scherzer. Fujita fails to suggest, *inter alia*, an edge member that includes a "flexible polyurethane

foam [that] has a molar ratio of urea bond relative to urethane bond of 7 or less and more than 0.2," as claimed. In Fujita, the speaker edge is formed by a polyurethane foam, but not Applicants' claimed polyurethane foam.

Thus, Fujita does not rectify the above-described deficiency of Scherzer.

Secondly, even if the references were combined as asserted in the Office Action, they would not result in Applicants' claimed invention. The result might be a speaker edge made of foam, but not Applicants' claimed speaker edge member made of flexible polyurethane foam having a molar ratio of urea bond relative to urethane bond of 7 or less and more than 0.2, including the desirable structural characteristics attendant thereto.

Therefore, the claimed invention would not have been obvious because there is no suggestion or motivation in either Scherzer or Fujita that would have led one to select the references and combine them in a way that would produce the invention defined by any of claims 1, 3, 4, 13 and 14. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

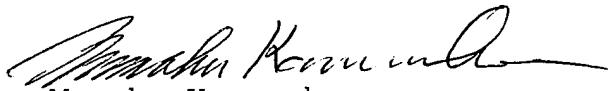
For at least the above reasons, reconsideration and withdrawal of the rejection of claims 1, 3, 4, 13 and 14 under § 103(a) are respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the examiner is respectfully requested to withdraw the outstanding rejections of the claims and pass this application to issue.

One month extension of time is hereby requested. A credit card authorization form in the amount of \$120.00 is attached herewith for the one month extension of time.

Respectfully submitted,

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